

Amendments to the Claims:

1. (Currently amended) A method of reducing pathogenicity of a fungus that produces fumonisin, comprising:

a) stably integrating into the genome of a plant cell a ~~primary~~ first nucleotide sequence operably linked to a first promoter active in said plant cell, wherein said primary first nucleotide sequence comprising at least one sequence has at least 95% sequence identity to the sequence set forth in SEQ ID NO: 16, 18, 20, 22, 24, 26, 28, 30, or 32 and encodes a polypeptide having amine oxidase activity; selected from the group consisting of

b) optionally stably integrating into the genome of said plant cell a second nucleotide sequence operably linked to a promoter active in said plant cell, wherein said second nucleotide sequence a sequence encoding has at least 95% sequence identity to the sequence set forth in SEQ ID NO: 12 or 14 and encodes a polypeptide having fumonisin esterase activity; and

a sequence encoding a polypeptide having amine oxidase activity;
and,

b) c) stably integrating into the genome of said plant cell a secondary third nucleotide sequence operably linked to a second promoter active in said plant cell, wherein said secondary third nucleotide sequence has at least 90% 95% identity to the sequence set forth in SEQ ID NO: 2, 4, 7, or 10, and wherein said sequence encodes a polypeptide having fumonisin detoxification activity.

2. (Currently amended) The method of claim 1, wherein said ~~primary~~ second nucleotide sequence comprises the sequence set forth in SEQ ID NO: 12 or 14 encoding a polypeptide having fumonisin esterase activity is ESP1 or BEST1.

3. (Currently amended) The method of claim 1, wherein said ~~primary~~ third nucleotide sequence comprises the sequence set forth in SEQ ID NO: 2, 4, 7, or 10 encoding a polypeptide having amine oxidase activity is an amino polyamine oxidase.

4. (Currently amended) The method of claim 1, wherein ~~the primary said first~~ nucleotide sequence ~~stably incorporated into the plant cell~~ comprises the sequence set forth in SEQ ID NO: 16, 18, 20, 22, 24, 26, 28, 30, or 32. ~~comprises the sequence encoding a polypeptide having fumonisin esterase activity and the sequence encoding a polypeptide having amino oxidase activity.~~

5. (Original) The method of claim 1, wherein said plant is a monocot.

6. (Original) The method of claim 5, wherein said monocot is maize.

7. (Original) The method of claim 1, wherein said plant is a dicot.

8. (Currently amended) The method of claim 1, wherein ~~at least one of~~ said first promoter ~~and said second promoter~~ is an inducible promoter.

9. (Currently amended) The method of claim 8 further comprising inducing expression of said first primary and said secondary nucleotide sequences sequence for a time sufficient to reduce pathogenicity of said fungus.

10. (Currently amended) A plant having stably ~~integrating~~ integrated into its genome;

a) a ~~primary first~~ nucleotide sequence operably linked to a promoter active in said plant, wherein said primary first nucleotide sequence comprising at least one nucleotide sequence has at least 95% sequence identity to the sequence set forth in SEQ ID NO: 16, 18, 20, 22, 24, 26, 28, 30, or 32 and encodes a polypeptide having amine oxidase activity;
~~selected from the group consisting of~~

b) optionally, a second nucleotide sequence operably linked to a promoter active in said plant, wherein said second nucleotide sequence has at least 95% sequence identity to the sequence set forth in SEQ ID NO: 12 or 14 and encodes encoding a polypeptide

having fumonisin esterase activity ~~or a sequence encoding a polypeptide having amine oxidase activity~~; and,

b) c) a secondary third nucleotide sequence operably linked to a promoter active in said plant, wherein said ~~secondary third~~ nucleotide sequence has at least 90% 95% identity to the sequence set forth in SEQ ID NO: 2, 4, 7, or 10, ~~and wherein said sequence~~ encodes a polypeptide having fumonisin detoxification activity.

11. (Currently amended) The plant of claim 10, wherein said ~~primary second~~ nucleotide sequence is set forth in SEQ ID NO: 12 or 14 ~~encoding a polypeptide having fumonisin esterase activity is ESP1 or BEST1.~~

12. (Currently amended) The plant of claim 10, wherein said ~~primary first~~ nucleotide sequence encodes ~~encoding a polypeptide having amine oxidase activity is an amine polyamine oxidase~~ the sequence set forth in SEQ ID NO: 17, 19, 21, 23, 25, 27, 29, 31, or 33.

13. (Currently amended) The plant of claim 10, wherein ~~the primary said first~~ nucleotide sequence ~~stably incorporated into the plant~~ comprises the sequence set forth in SEQ ID NO: 16, 18, 20, 22, 24, 26, 28, 30, or 32. ~~cell comprises a sequence encoding a polypeptide having fumonisin esterase activity and a sequence encoding a polypeptide having amine oxidase activity.~~

14. (Original) The plant of claim 10, wherein said plant is a monocot.

15. (Original) The plant of claim 14, wherein said monocot is maize.

16. (Original) The plant of claim 10, wherein said plant is a dicot.

17. (Previously amended) Transformed seed of the plant of claim 10.

18. (Currently amended) A plant cell having stably integrating into its genome:

a) a primary first nucleotide sequence operably linked to a promoter active in said plant cell, wherein said primary first nucleotide sequence comprising at least one nucleotide sequence has at least 95% sequence identity to the sequence set forth in SEQ ID NO: 16, 18, 20, 22, 24, 26, 28, 30, or 32 and encodes a polypeptide having amine oxidase activity; selected from the group consisting of

b) optionally, a second nucleotide sequence operably linked to a promoter active in said plant cell, wherein said second nucleotide sequence has at least 95% sequence identity to the sequence set forth in SEQ ID NO: 12 or 14 and encodes encoding a polypeptide having fumonisin esterase activity or a sequence encoding a polypeptide having amine oxidase activity; and,

b) c) a secondary third nucleotide sequence operably linked to a promoter active in said plant cell, wherein said secondary third nucleotide sequence has at least 90% 95% identity to the sequence set forth in SEQ ID NO: 2, 4, 7, or 10 and wherein said sequence encodes a polypeptide having fumonisin detoxification activity.


19. (Currently amended) A method of reducing pathogenicity of a fungus that produces fumonisin, comprising stably integrating into the genome of a plant cell:

a) a primary first nucleotide sequence operably linked to a promoter active in said plant cell, wherein said primary first nucleotide sequence comprising at least one nucleotide sequence encodes a polypeptide having at least 95% sequence identity to the sequence set forth in SEQ ID NO: 17, 19, 21, 23, 25, 27, 29, 31, or 33 and having amine oxidase activity; selected from the group consisting of

b) optionally, a second nucleotide sequence operably linked to a promoter active in said plant cell, wherein said second nucleotide sequence encodes a polypeptide having at least 95% sequence identity to the sequence set forth in SEQ ID NO: 13 or 15 and encoding a polypeptide having fumonisin esterase activity or a sequence encoding a polypeptide having amine oxidase activity; and,

b) c) a secondary third nucleotide sequence operably linked to a promoter active in said plant cell, wherein said secondary third nucleotide sequence comprises at least one sequence selected from the group consisting of a nucleotide encodes a polypeptide having at least 95% sequence identity to the sequence set forth in one of SEQ ID NO: 3, 5, 8, or 10 2, 4, 7, and 10, and having fumonisin detoxification activity.

20. (Currently amended) A plant having stably integrating into its genome

 a) a primary first nucleotide sequence operably linked to a promoter active in said plant cell, wherein said primary first nucleotide sequence comprising at least one nucleotide sequence encodes a polypeptide having at least 95% sequence identity to the sequence set forth in SEQ ID NO: 17, 19, 21, 23, 25, 27, 29, 31, or 33 and having amine oxidase activity; selected from the group consisting of

b) optionally, a second nucleotide sequence operably linked to a promoter active in said plant cell, wherein said second nucleotide sequence encodes a polypeptide having at least 95% sequence identity to the sequence set forth in SEQ ID NO: 13 or 15 and encoding a polypeptide having fumonisin esterase activity or a sequence encoding a polypeptide having amine oxidase activity; and,

b) c) a secondary third nucleotide sequence operably linked to a promoter active in said plant cell, wherein said secondary third nucleotide sequence comprises at least one sequence selected from the group consisting of a nucleotide encodes a polypeptide having at least 95% sequence identity to the sequence set forth in one of SEQ ID NO: 2, 4, 7, and 10 3, 5, 8, and or 11 and having fumonisin detoxification activity.

21. (Currently amended) The method of claim 1, wherein said secondary third nucleotide sequence has at least ~~95%~~ 98% identity to the sequence set forth in SEQ ID NO: 2, 4, 7, or 10.

22. (Currently amended) The method of claim 1, wherein said secondary third nucleotide sequence encodes the polypeptide set forth in SEQ ID NO: 3, 5, 8, or 11.

23. (Currently amended) The plant cell of claim ~~10~~ 18, wherein said ~~secondary first~~ nucleotide sequence ~~has at least 95% identity to the sequence~~ is set forth in SEQ ID NO: 2, 4, 7, or 10 16, 18, 20, 22, 24, 26, 28, 30, or 32.

24. (Currently amended) The plant of claim 10, wherein said ~~secondary~~ third nucleotide sequence encodes the polypeptide set forth in SEQ ID NO: 3, 5, 8, or 11.

25. (Currently amended) The plant of claim 10, wherein said ~~secondary~~ third nucleotide sequence is the sequence set forth in SEQ ID NO: 2, 4, 7, or 10.

26. (Currently amended) The plant cell of claim 18, wherein said first nucleotide sequence has at least 98% sequence identity to the sequence set forth in SEQ ID NO: 16, 18, 20, 22, 24, 26, 28, 30, or 32, said second nucleotide sequence has at least 98% sequence identity to the sequence set forth in SEQ ID NO: 12 or 14, and said secondary third nucleotide sequence has at least 95% 98% identity to the sequence set forth in SEQ ID NO: 2, 4, 7, or 10.

27. (Currently amended) The plant cell of claim 18, wherein said ~~secondary~~ third nucleotide sequence encodes the polypeptide set forth in SEQ ID NO: 3, 5, 8, or 11.

28. (Currently amended) The plant cell of claim 18, wherein said first nucleotide sequence encodes a polypeptide having at least 95% sequence identity to the sequence set forth in SEQ ID NO: 17, 19, 21, 23, 25, 27, 29, 31, or 33, said second nucleotide sequence encodes a polypeptide having at least 95% sequence identity to the sequence set forth in SEQ ID NO: 13 or 15, and said secondary third nucleotide sequence is encodes a polypeptide having at least 95% sequence identity to the sequence set forth in SEQ ID NO: 2, 4, 7, or 10 3, 5, 8, or 11.

29. (Currently amended) The method of claim 8 1, wherein said first nucleotide sequence encodes a polypeptide having the sequence set forth in SEQ ID NO: 13 or 15, said

second nucleotide sequence encodes a polypeptide having the sequence set forth in SEQ ID NO: 17, 19, 21, 23, 25, 27, 29, 31, or 33, and said third nucleotide sequence encodes a polypeptide having the sequence set forth in SEQ ID NO: 3, 5, 8, or 11 ~~first promoter and said second promoter are the same promoter.~~

30. (Currently amended) The ~~method plant cell~~ of claim ~~4~~ 18, wherein said ~~primary first~~ nucleotide sequence ~~comprises at least one sequence having~~ encodes a polypeptide comprising the at least 95% sequence identity to the sequence set forth in SEQ ID NO: 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, or 32 17, 19, 21, 23, 25, 27, 29, 31, or 33, said second nucleotide sequence encodes a polypeptide comprising the sequence set forth in SEQ ID NO: 13 or 15, and said third nucleotide sequence encodes a polypeptide comprising the sequence set forth in SEQ ID NO: 3, 5, 8, or 11.

31. (Currently amended) The ~~method plant cell~~ of claim ~~4~~ 18, wherein said ~~primary third~~ nucleotide sequence ~~comprises at least one sequence having~~ is set forth in SEQ ID NO: 2, 4, 7, or 10 ~~at least 90% sequence identity to the sequence set forth in SEQ ID NO: 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, or 32.~~

32. (Currently amended) The plant of claim 10, wherein said ~~primary first~~ nucleotide sequence ~~comprises at least one sequence having~~ encodes a polypeptide comprising the sequence set forth in at least 95% sequence identity to the sequence set forth in SEQ ID NO: 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, or 32 17, 19, 21, 23, 25, 27, 29, 31, or 33, said second nucleotide sequence encodes a polypeptide comprising the sequence set forth in SEQ ID NO: 13 or 15, and said third nucleotide sequence encodes a polypeptide comprising the sequence set forth in SEQ ID NO: 3, 5, 8, or 11.

33. (Currently amended) The plant cell of claim ~~4~~ 18, wherein said ~~primary second~~ nucleotide sequence ~~comprises at least one sequence having at least 90% sequence identity to the sequence~~ is set forth in SEQ ID NO: 12, or 14, 16, 18, 20, 22, 24, 26, 28, 30, or 32.